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Evaluation of impact factors of articles in scientific open access journals in Türkiye

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Abstract: In this study, the phonographic view of the acceleration of scientific publishing in Türkiye has been revealed with TÜBİTAK/DergiPark data and the values of the measurements of the impact factors of scientific journals have been sampled with the SOBIAD Index data. SOBIAD Index dataset was used in the study. Using the "full count" research method, the data were analyzed by providing access to the entire mass, which is the research population, based on purpose-oriented descriptive analysis. In the calculation of the impact factors of the articles in the SOBIAD index, multiple parameters such as the total number of citations of the articles in the journal, citation comparison (percentage) and area-weighted citation impact, new metric joint values and the similarity criteria in the content evaluation were determined. In the study, the measurement and evaluation standards of international impact factor measuring institutions (WOS-SSCI, Google Scholar, Eigenfactor Metrix and Elsevier/Scopus Index) were also used. According to the results of the research, while the average value of the impact factors of scientific journals in Türkiye is 0.19, this is seen as 6,19 in WOS-SSCI. With the research, the examination of the impact factors of scientific journals and articles in Türkiye was presented as an original review through the SOBIAD index sample. In order to increase the quality and impact factor of journal/article in academic publishing in Türkiye, qualified growth is required rather than quantitative growth.

1. INTRODUCTION

Article sharing and use of open access journals directly or indirectly affect article authors, journal publishers, researchers and information centers in terms of productivity. The sharing of scientific information articles by open access journals provides the sharing of information=commodity resource, which is intellectual capital. In this context, the number of citations to scientific publications is one of the most important criteria used to measure the scientific, intellectual, economic and social impact of a publication. The organization of knowledge is not independent of its production. In addition to the bibliometric measurements based on the indicators of the scientific journals in Türkiye and the articles published in these journals, bibliometric network analyzes were also carried out. It has become important for open access journals to publish scientific articles produced by scientists and to measure the impact values of the articles in terms of value and value creation. Bibliometric measurement is one of the important criteria used to measure not only the number of citations to scientific publications,

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but also the scientific and intellectual effects of authors. The average number of citations to a country's scientific publications is interpreted as an indicator of that country's scientific wealth (Tonta & Akbulut, 2021, p.389). In the modern world, knowledge has become a valuable commodity. Knowledge has a direct impact on the creation and provision of new knowledge, values, technologies, resources and employment. In this context, unrestricted open information has become important for corporate and legal identities that produce scientific knowledge, information users, and those who transform information into value and product. On the other hand, access to open information is mostly found in open access journals, and unhindered access can be provided. Therefore, with unhindered easy access to open access journals, the use of the journal, readability of the articles and citation levels have become important. In this study, it was evaluated how the accessibility of open access scientific journals in Türkiye, bibliometric measurements of the effects of citing articles to other scientific studies, and the rational and objective evaluation of the findings influence the developing open access publishing journals, open access platforms, authors and information users in the context of interaction. With our research study, the citation rates of the results of 871 open access scientific journals in the SOBIAD Index (SOBIAD Index, 2020a) were examined by subjecting them to a resource-based and productivity-oriented research. As a result, the knowledge and technology that develop at the global level have radically changed the publishing of academic journals. This change has developed in favor of publishers, writers and information users in terms of efficiency and production. According to the developing change, electronic format open access publishing, which is a new publication model, has forced scientific journals and publishers to open access publishing. Soon, the passwords of open access publishing will be provided by controlling the content licenses of scientific resources. This study reveals the measurement of impact factors, the use of source values, validity and operability of scientific journals that make open access publishing in Türkiye. We believe that the development of scientific publishing open access journals in Türkiye will contribute to scientific writers, information users and future scientific studies on similar topics. This study is the first to evaluate the measurement values of the impact factors of open access scientific journals in Türkiye through the SOBIAD Index sample. When the literature is examined, it is seen that many instruments are used to measure the impact factors. In the study, the population and the sample of the research consist of the same data set. In the study, all data values were accessed by using the full count method. With the study, the impact values of national-level journals in Türkiye were subjected to multiple regression of the SOBIAD Index data set to reach valid and reliable measurement values. In assessment and evaluation, the assessment and evaluation methods of WOS, Scopus, Eigenfactor Metrix and Google Schoolar were also examined and referenced. We believe that this study will contribute to scientific studies on similar subjects after it.

2.1. Literature Review of the Research

Regarding the research topic, national and international scientific studies were examined. Among the prominent publications in the national literature, a limited number of studies such as Tonta and Akbulut's (2021) study titled “Factors Increasing the Citation Effect of Articles from Türkiye Published in International Journals”, TÜBA, Türkiye Science Report, Türkiye Scientific and Technological Research Council-TUBITAK, ULAKBIM/Cahit Arf Bilgi Center (2021), Türkiye Scientific Publication Performance Reports: Journal Performance Indicators of Scientific Publications from Türkiye in WOS, by Alptekin Durmuşoğlu (2017) “A Study on Data Mining: Türkiye-Addressed Publications”, by Al (2008), “Türkiye's Scientific Publication Policy: A Bibliometric Approach Based on Citation Indexes”, and by Mecbure Aslan (2021), A Study on Work-Life Balance: “Bibliometric Analysis of Graduate Theses” were examined. In the international content of the literature, the impact factor calculations of the Web of Science (WOS) and the reports on the subject (Clarivate Journal Citation Reports: Reference Guide, 2011) were examined. These studies were followed by the metrics measurement studies of

Elsevier Science & Scops Index (Elsevier, 2020) and Elsevier Science Index: Measuring a Journals Impact, (Elsevier, 2021a) and Google Scholar Index (Google, 2021). Also, the “Leiden Manifesto” for research articles and bibliometric research scales was reviewed (Hicks, & Wouters, 2015).

2. METHOD

Bibliometrics is a statistical analysis of existing studies and is used for quantitative analysis of articles in a particular fiel (Aslan, 2021, p.30). SOBIAD data set was used in the preparation of the bibliometric data set. The method of this research is based on the "counting method in bibliometrics"(Gauffriau, 2021, p.233). With this method, the basic elements of the bibliometric indicator shown by the findings in the examination and the factor analysis were made with the "full count" method in order to determine the bibliometric research findings. The "full counting" method was used in the study (Tutar & Erdem; 2020, p.245-295). A counting indicator functions as one of the essential elements of a bibliometric (Gauffriau, 2021, p.233). The "exact counting" method was used in the study (Tutar & Erdem; 2020, p.245-295). This method indicator functions as one of the basic elements of a bibliometric information (Gauffriau, 2021, p.233). Therefore, in this methodology, the research population and sample consist of the entire data set. Due to the limited research data, the research sample group consists of the entire research population. Qualitative and quantitative data tools were used together in the research. In the data collection process, the last 2 years' quantitative data of the SOBIAD Index data set and the qualitative data obtained from authorized persons constituted the data and process of the research. The data findings are presented together with the statistical results supported by visual graphics.

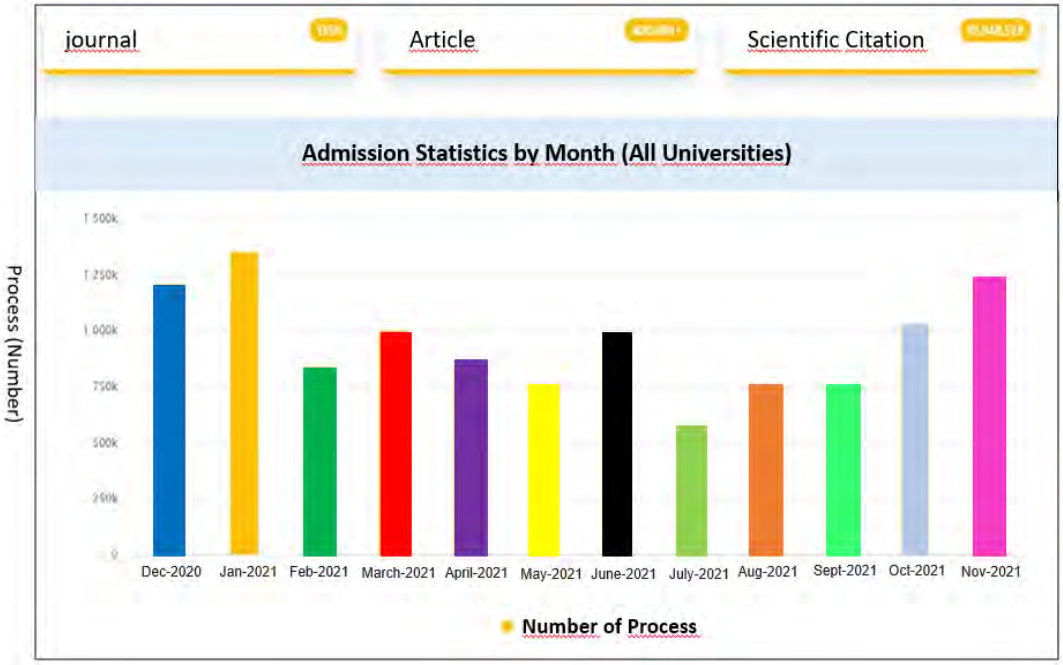
In the global world, information has become a valuable commodity. In this context, the importance of open access scientific journals is increasing day by day. Many publics, private institutions and legal entity owners in Türkiye publish scientific journals electronically. In this context, the data set of 871 scientific journals in SOBIAD Index, which indexes scientific journals in Türkiye, constitutes our research population (SOBIAD Index, 2020b). SOBIAD Index dataset is publicly available on the official website of the organization as open access. At the beginning of the research process, the general manager of the SOBIAD Index directory was informed that such research would be conducted, and the legal permission was obtained from the relevant institution for the research. In our research study, the journals in the SOBIAD index directory constitute the population and sample of the research. In addition, the impact factors of these journals and the content interactions of the citation numbers, the research methods specified in the subsections of this section, the research model, the research population and sample, data sources and data collection tool and data analysis are defined in the study. The findings of the research are indicated with graphs consisting of statistical values that blend quantitative data with factor distributions. In the conclusion part of the study, the findings were interpreted by expressing them as qualitative data supported with quantitative data. With citation analysis, scientific information about the literature flow is revealed by providing citation networks, informetric laws and productivity analysis. (Todeschini & Baccini, 2016, pp.19-20).

2.1. SOBIAD Index

SOBIAD Index is a private Turkish patented TR Index (TR Dizin) company (SOBIAD Index, 2021c). This firm examines the journals that contain the scientific articles with academic content in the fields of society, health and science, and measures the citation and citation impact values of the articles published in these journals. According to 2020 data, there are 1355 journals, 400000+ articles, 10949523 citations in SOBIAD Index (SOBIAD Index, 2021d). In the research, the impact values and citation results of 871 open access scientific journals

according to the 2019 data in the SOBIAD Index were examined by subjecting them to a resource-based and productivity-oriented research. The bibliographies of the electronic journals that have been published for at least 4 years in the field of Social Sciences and at least 3 years in the fields of Science and Health Sciences were searched in the SOBIAD Index; as a result of this searching, the citations made by the author/authors in their works were revealed. The data of the study consist of the data set of the SOBIAD index. Statistical (factor) analyzes and the resulting statistical values are detailed in the relevant section of the study (2.5. Distribution Data of Impact Factor of SOBIAD Index).

Figure 1. *SOBIAD Index User Statistics Data.*



Source: SOBIAD Index Statistics (2021), URL: https://atif.SOBIAD.com/index.jsp?modul=istatistik

In Figure 1, access by universities and users to the journals in the SOBIAD index is indicated along with the monthly entry statistics. And thus, users can access the data set in the SOBIAD index and have open access to journals, articles and scientific citations. Table 1 shows the number of transactions made by the users and the content information.

Table 1. *SOBIAD User Transaction Frequency Rates (Last 1 Year).*

Pocess	Number
11396826	Article detail view
4554611	View profile download
855907	Citation search
166448	Search by journal name
537927	View profile
62764	Search by title
66396	Search by author name
20820	Search in full text
16910	Search by keyword
13770	Audion listening

Source: SOBIAD Index Statistics (2021), URL: https://atif.sobiad.com/index.jsp?modul=istatistik

The purpose of SOBIAD Index is to reveal the citations made by the authors to other articles and books in the articles published in academic and scientific journals. For this purpose, it is aimed to determine the impact value of a journal registered in the database among other journals. It is possible to access the full texts and abstracts of registered journals with the SOBIAD Index. In addition, another aim is to statistically reveal the impact value of a journal with an impact value compared to another journal. With the SOBIAD Index, current articles can be viewed instantly and access to the abstracts and full texts of the articles can be provided upon request. Journal links will be active in the title of scanned journals. Thus, access to Türkiye-based academic and scientific journals will be faster and easier. SOBIAD Index Directory accepts corporate membership/subscription. Therefore, it appeals to both single-user and multi-user audiences. Journals and scanned articles in this index include publications in both Turkish and other languages, mostly found in Türkiye-based electronic journals. SOBIAD index is a citation index that performs citation search and bibliometric data analysis specialized in science, health and social sciences (SOBIAD Index, 2021e).

2.2. Journal Publishing and Indexing in Türkiye

In the academic world, the value of the scientific journal is evaluated in proportion to the index and the average number of citations of the articles accepted by the journal (Flint, 2021). The institutional curatorship of academic publishing in Türkiye is managed by the DergiPark Academic unit, which is run by ULAKBİM affiliated to TUBITAK (DergiPark, 2021a). This institution is a public institution that helps the journals to survive and to make quality publications at high standards by providing infrastructure support such as policy, standard, network and software to scientific journals published by public, private and legal persons that produce scientific output value in Türkiye. The purpose of the DergiPark Academic unit to provide these services is to ensure the development of academic *periodicals* in Türkiye in accordance with quality and standards, to increase the visibility and use of national academic journals all over the world, to ensure widespread and advanced use of a system that enables the management of journals in an electronic environment, to provide measurable clean data for the Türkiye TR national citation index (DergiPark, 2021b), DergiPark Academic unit office is not an institution that performs index operations. The public national citation index in Türkiye is carried out by the TR Index office, a sub-unit of ULAKBIM, which operates under TUBITAK (TR Index, 2021a). TR Index indexes the articles in scientific journals published between 1961 and 2021. Türkiye TR Index Office evaluates the article indexing processes by considering the publication ethical values (TR Index, 2021b) and standards determined by the institution (TR Index, 2021c). In Türkiye, the indexing process of academic journals that publish scientific publications other than "TR Index Institution" is carried out by SOBIAD Index company (SOBIAD Index, 2020c). Scanning model was used in the research. Monitoring and sectioning approaches were applied to the data set. Temporal developments and changes of the research sample were determined.

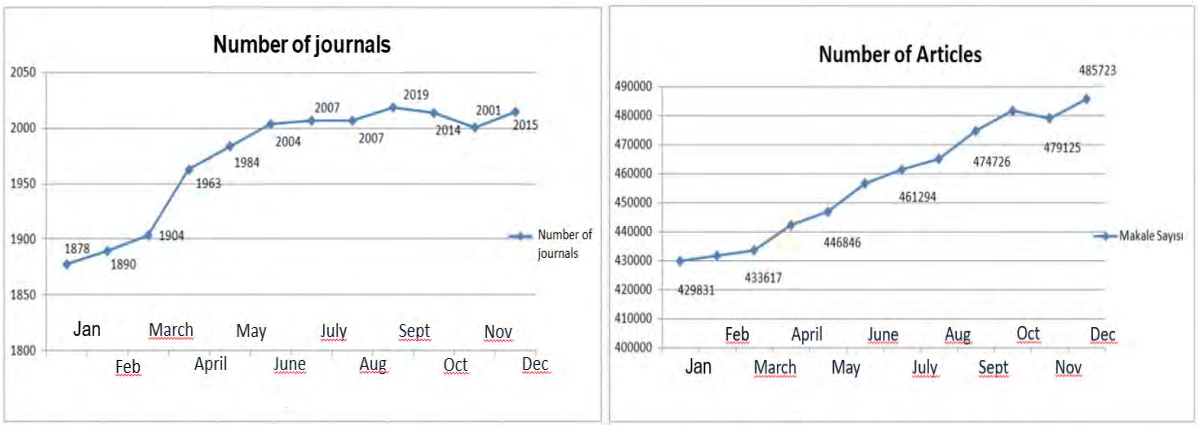
The research population and sample of the study consists of the data set that includes 871 scientific journals in the SOBIAD Index. The data set of the SOBIAD Index was used to evaluate the impact factors of the open access journals reached during the research process. SPSS and MAXQDA 2020 program were used as data collection tools. Descriptive statistics, quantitative content analysis and bibliometric analysis were used together in the analysis of the research data. The findings of the study were subjected to multiple regression in which qualitative and quantitative data were interpreted together and the resulting findings were revealed together with the statistical distribution data.

2.3. The Numbers of Scientific Journals, Publishers and Produced Articles in Türkiye

According to the 2022 official data of DergiPark Akademik (Figure 2), the number of scientific articles produced in Türkiye in a year is 578.128, the number of journals is 2.544, the number of publishers is 1.058, and the number of researchers is 496.544 (DergiPark, 2022).

When we examine the international and national research reports, it is seen that although there has been a measurable increase in scientific studies in Türkiye in recent years, it is still behind these developed countries when compared to OECD and European Union countries (Akçiğit & Tok, 2021, p.16). According to the scientific publication performance report data, Türkiye's journal impact factor averages for the years 2011-2015 are stated as 4.2. The data of this report consists of the impact factor values of the articles with Türkiye extension published in SSCI journals (TR Index, 2021d). Since an official result for the citation averages of the journals in the TR Index and DergiPark platform, which publishes scientific publications in Türkiye with Türkiye extension, has not yet been specified, the data in this field could not be reached.

Figure 2. DergiPark, *Türkiye Journal and Article Development Chart (2020).*



Source: DergiPark, URL: https://dergipark.org.tr/tr/pub/page/about

According to the 1996-2016 WOS data in the study of Tonta and Akbulut (2021) titled "Factors Increasing the Citation Effect of Articles Published in International Journals with a Turkish Address", the impact factor averages of scientific journals with Türkiye extension were expressed as 1.6 (Tonta & Akbulut; 2021, p.390). It can be predicted that these data are lower in scientific journals published at the national level in Türkiye. If TR Index journal impact factor data were available, it would be possible to have information about the national impact factors of journals and articles across Türkiye and to compare with the SOBIAD Index journal and article impact factor values, which is the subject of the research. However, the data gap in this area can be considered among the limitations of the research. In the contemporary world, bibliometric studies are considered as a part of publication policy (Al, 2020, p.14).

2.4. Evaluation of SOBIAD Index Impact Factors

871 journals in the SOBIAD Index constitute the data set of the research. In the research, the "full count" research method was used, and with this method, all information in the data set in the population (N) was accessed, and the information was obtained by examining the variable values (mean, ratio, variant and total values, etc.). In terms of the importance of the research (SOBIAD Index), the data set was examined by considering the whole population with the full count method rather than the sample (n) value, and the result value findings were determined. Therefore, an error that may arise from the estimation in the full count is minimized. In the research, 2019 Impact Factor of the journals scanned based on the information in the SOBIAD Index database is a numerical data about the citation status of the articles published in the journals scanned in the database. The calculation of the SOBIAD Index impact factor is done

as follows: The basic calculation logic in calculating the impact factor of a journal for any year is provided by dividing the number of citations for the previous year of the year to be calculated by the number of publications of two previous years (SOBIAD Index, 2020f). To illustrate, the rate of the citations in 2019 of the articles published in 2017 and 2018 gives the journal's 2019 impact factor (Karamustafaoğlu, 2007, p.2).

$$A = \frac{\text{Number of Citations } 2019}{\text{Number of Publications } 2017\text{-}2018}$$

The contents such as reader letters, translated articles, news published in the journals in the form of articles are not included in the calculation of the impact factor of the journals in the SOBIAD Index. In the impact factor calculation logic of the SOBIAD Index, the research metric measurement criteria of the Web of Science's impact factor calculation methodology (WOS, 2021) and the Elsevier Science-Science Direct SCOPUS Index (Elsevier, 2020) and components are similar. In the calculation, the measurements and standards of "Eigenfactor Metrix" were also taken into consideration (Eigenfactor Metrix, 2021a). In the evaluation of the citations made by authoritative publishers and journals with high impact factor, the measurement values of this metric have been considered in the score calculations of the articles that are in demand for citations (Eigenfactor Metrix, 2021b). Under normal circumstances, there is a direct interaction with the citation numbers of the article published in the journal, the journal impact factors and citations of other cited articles (SOBIAD Index, 2020g). However, the presence of more than one component in the evaluation of the citation and score effect of the articles published in the journals in the SOBIAD Index was reflected as small values in the calculation of the journal impact factors. Therefore, in this measurement, the citation score of any article published in the journals included in the relevant index may not be directly reflected in the impact value of the relevant journal. There are multiple reasons for this situation. The content effects of multiple components are also decisive in calculating the impact factors of the journals in the SOBIAD Index. These criteria are the institutional structure of the journal, being subject to international open access agreements and open access policies, national and international participant content of journal science and referee boards, the number of local and foreign authors, publication language of the journal, local, national and international content dimension of the journal, home page contents, publication periods of the journal, institutional or legal personality of the journal, local (regional), national and international dimension of the journal, the thematic nature of the journal and the contribution of scientific publications to local development, plagiarism status and levels of the articles in the journal, transparency of the journal and the commercial structure of the journal. In addition, the evaluation of the journal's referee practices (open refereeing, blind refereeing, peer refereeing, etc.), the objectivity and consistency of the journal editor and / or editorial working groups, the social media and social media interactions of the journals, how user-friendly the journal homepages are and journal publisher and / or publisher information are the other criteria. The advisory board of 5 people took part in the calculation of the impact factors of the journals in the SOBIAD Index. This committee includes independent faculty members selected from universities, metric software specialist engineers, librarians and index managers. In the measurement of the impact factors of the journals, this committee examined the presence of the above-mentioned components in the journals and undertook the task of making small scores and adding them to the metric. Similar metric components in the calculation of journal impact factor are also similar in organizations that measure international impact factor. Within the scope of the research, all 871 journals representing both the research population and the research sample were analyzed quantitatively and qualitatively, based on the information obtained from the data set, according to the 2019 SOBIAD Index data. In Türkiye, 678 journals out of 871 journals in the SOBIAD

Index were exposed to an impact factor in the range of 1.117 & 0.000. Since 192 journals in the research dataset were not exposed to the impact factor, the data were not evaluated. In order to ensure the reliability of the research and to reach all of the data, the "full count" sampling method was used in data collection. It is aimed to reach all units of the main mass, which is the research population, and to examine the entire population with the full count method (Tutar & Erdem, 2020, p.242-295). With this method, it is possible to reach all the elements of the population. Due to the physical form (graphic) constraints of the research, all of these journals could not be included in the graphics specified in the research, and the selected journals were included in the sample. This situation can be shown as a limitation of the research. The fact that the research is a current due diligence and compilation study for national and international literature shows the original aspect of the research. It is thought that the research will shed light on the future scientific studies.

2.5. Distribution Data of Impact Factor of SOBIAD Index

It is important to measure the impact factors of scientific journals in the world and in Türkiye based on multiple components because scientific articles have turned into the most valuable commodity that contributes to social life and economy. In this context, the impact factors of scientific journals constitute the scientific exchange rate of the journal, article, author/s and countries. In addition to scientific values, the impact factors of journals are important as trust values in every field (Law & Leung, 2019, p.734-742). In this study, the metric components in the analysis of the research data, the total number of citations (citations) of the articles in the journal according to the user date range as well as the Scopus Index measurement (Elsevier, 2021b) values, citation comparison (percentage) and area-weighted citation effect, new metric joint values in metric measurements and the number of views were considered in the evaluation of the content. The graphical contents of the data set of SOBIAD Index consist of the following data.

2.5.1. *Initial scatter chart*

According to SOBIAD database 2019 data, out of 871 scientific journals publishing in Türkiye, there are 3 journals with the impact factors between 1.171 and 1.000 in the national literature (SOBIAD Index, 2020i). These data also show that they remain low in terms of impact factor efficiency (see Table 2).

Table 2. *Impact Factor Initial Scatter Chart* (Between 1.117-1.000).

The Journals	Number of citations	Impact factor
Journal for the Education of Gifted Young Scientists	41	1.171
Journal of Banking and Financial Studies (BAFAD)	16	1.067
Online Journal of Technology Addiction & Cyberbullying	18	1.059

2.5.2. *Second scatter chart*

According to the information in the SOBIAD Index dataset, there are 19 journals in the national literature with an impact factor between 1.000 and 0.700. Since it is not possible to include all the journals in this field due to the limitations of the study, 10 journals selected from the impact factor range specified in Table 3 are indicated in the scatter chart.

Table 3. *Impact Factor Second Scatter Chart* (between 1.000 - 0.700).

The Journals	Number of citations	Impact factor
Journal of Hasan Ali Yucel Faculty of Education	31	0.939
Journal of Applied Social Sciences	13	0.929
Journal of Education and Science	127	0.882
Journal of Turkish Librarianship	11	0.846
The Turkish Journal on Addictions (ADDICTA)	36	0.837
E-Kafkas Journal of Educational Research	25	0.833
Bartın University Journal of the Faculty of Economics and Administrative Sciences	37	0.804
Journal of Dicle University Ziya Gokalp Faculty of Education	41	0.804
Journal of 100. Yil University Faculty of Education	93	0.802
Journal of Travel and Hotel Management	61	0.792

2.5.3. *Third scatter chart*

According to the information in the SOBIAD Index dataset, there are 64 journals in the national literature with an impact factor between 0.700 and 0.500. Since it is not possible to include allthese journals in terms of the limitations of the study, 12 journals selected within the impact factor range specified in Table 4 are indicated in the scatter chart.

Table 4. *Impact Factor Third Scatter Chart* (0.700 - 0.500).

The Journals	Number of citations	Impact factor
Journal of Geography	13	0.722
Journal of Bayburt Faculty of Education	48	0.716
SDU International Journal of Educational Studies	16	0.696
International Journal of Active Learning	9	0.692
Western Anatolian Journal of Educational Sciences	13	0.684
Ihlara Journal of Educational Research	19	0.679
Journal of Hacettepe University Faculty of Education	81	0.675
Süleyman Demirel University Visionary Journal	41	0.672
Tourism Academic Journal	34	0.642
Journal of Accounting and Finance	75	0.641
Ege Journal of Education	38	0.594
Journal of Ahi Evran University Kirsehir Education Faculty	131	0.590

2.5.4. *Fourth scatter chart*

According to the information in the SOBIAD Index dataset, there are 287 journals in the national literature with an impact factor between 0.500 and 0.350. In terms of the limitations of the study, but not all these journals can be included, 10 journals selected within the impact factor range specified in Table 5 are indicated in the scatter chart.

Table 5. *Impact Factor Fourth Distribution Chart* (between 0.500 - 0.350).

The Journals	Number of citations	Impact factor
Turkish Online Journal of Qualitative Inquiry	17	0.486
International Review of Economics and Management	14	0.483
Ankara University Faculty of Educational Sciences Journal of Special Education	27	0.482
Gaziantep University Journal of Sport Sciences	34	0.479
Eskişehir Osmangazi University Turkish World Application and Research Center Education Journal	10	0.476
Management and Economics: Journal of Celal Bayar Un. Faculty of Economics and Administrative Sciences	51	0.472
Journal of Mother Tongue Education	63	0.47
Istanbul University Journal of Sport Sciencesv	15	0.469
Bilgi Journal of Social Sciences	14	0.467
Harran Education Magazine	7	0.467

2.5.5. *Fifth scatter chart*

According to the information in the SOBIAD Index dataset, there are 287 journals in the national literature with an impact factor between 0.350 and 0.120. In terms of the limitations of the study, but not all of these journals can be included, 12 journals selected within the impact factor range specified in Table 6 are indicated in the distribution chart.

Table 6. *Impact Factor Fifth Scatter Chart* (0.350 - 0.120).

The Journals	Number of citations	Impact factor
Boundless Journal of Education and Research	9	0.300
Journal of Sociology Studies	11	0.297
LAU Journal of Social Sciences	8	0.296
Journal of Academic Research and Studies	18	0.295
Journal of Human and Social Sciences Research	119	0.289
International Journal of Progressive Education	32	0.288
Mediterranean Journal of Educational Research	18	0.198
Journal of Uludağ University Faculty of Education	16	0.198
KTU Social Sciences Institute Journal of Social Sciences	9	0.196
Journal of Discourse Philology	8	0.195
Journal of Erzincan University Institute of Social Sciences	17	0.193
Marmara University Journal of Economic and Administrative Sciences	10	0.192

2.5.6. *Sixth scatter chart*

According to the information in the SOBIAD Index dataset, there are 224 journals in the national literature with an impact factor between 0.120 and 0.000. In terms of the limitations of the study, but not all these journals can be included, 13 journals selected within the impact factor range specified in Table 7 are indicated in the scatter chart.

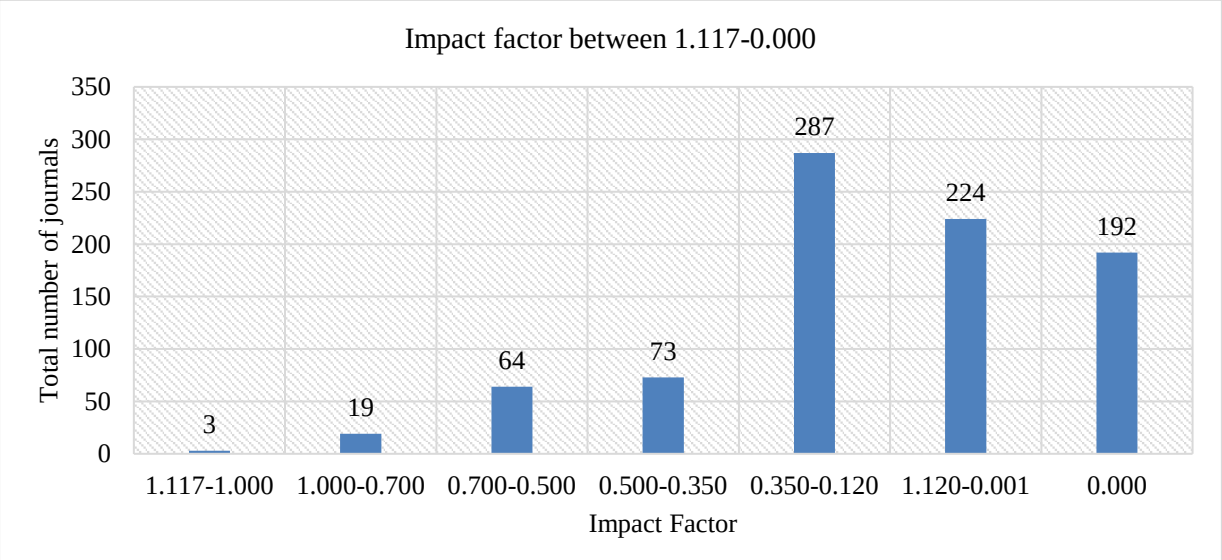
Table 7. *Impact Factor Sixth Scatter Chart* (0.120 - 0.000).

The Journals	Number of citations	Impact factor
Turkish History Education Journal	6	0.105
Journal of Artuklu Academy	3	0.103
Journal of N. Erbakan University Faculty of Theology	2	0.095
Journal of BEU Faculty of Theology	3	0.094
Journal of Cukurova Researches	4	0.093
Journal of Contemporary Turkish History Studies	6	0.085
International Journal of Sport Culture and Science	8	0.084
Journal of Information and Document Studies	1	0.083
Journal of Belgi	2	0.061
Eurasian Journal of International Studies	11	0.057
Journal of Dokuz Eylül University Faculty of Letters	1	0.033
Journal of Management and Economics Research	2	0.012
Selcuk University Journal of Turkic Studies	1	0.010

2.5.7. *Seventh scatter chart*

According to the information in the SOBIAD Index dataset, the total number of journals with the impact factor between 1.117 and 0.000 is indicated in the national literature. In this context, there are 3 journals with the impact factor between 1.117-1.000, 19 journals between 1.000-0.700, 64 journals between 0.700-0.500, 73 journals between 0.500-0.350, 287 journals between 0.350-0.120, 224 journals between 1.120-0.001 and 224 journals between 1.200-0.001. On the other hand, there are totally 192 journals without impact factors (Figure 3).

Figure 3. *Impact Factor Seventh Scatter Chart* (between 1.117 – 0.000).



3. DISCUSSION and CONCLUSION

The citations and impact factors of the scientific studies of the countries are similar to the scientific exchange rates of that country, just like the value of the national currency and the cross exchange rates. The higher the citation values of the articles in scientific journals published in a country and the impact factor of the journals, the more valuable the prestige of the country in science and its place among the world's nations. Journal impact factor is often used for multi-faceted interactions such as knowing about the scientific quality of individual research articles and individual journals, evaluating journals, articles and authors, and citation influence on other scientific studies. Journal impact factor is a quantitative measure based on

the ratio of annual citations in a particular journal to the total citations in that journal in the previous 2 years, and is not a mandatory measure for evaluating research quality. The research includes examining both the citation-based impact factor values and components of scientific journals from Türkiye in the SOBIAD Index. In the review, the SOBIAD Index measurement criteria were compared with the TR Index criteria and the impact values of the internationally valid indexes (WOS-SSCI) and the Elsevier-Scopus Index, and it was tried to add richness to the research. The content and impact values of national scientific journals in Türkiye can be evaluated as a compilation study based on the SOBIAD Index data sample.

Within the scope of the research, the SOBIAD Index data set consists of 871 journals representing the population of the research, based on the applied "full count" method. According to the research data and findings, 678 of 871 journals representing the population were exposed to the impact value; on the other hand, 192 journals in the data set were not included in the data evaluation process because they were not exposed to the impact value (n/a). In the study, the impact values of the journals exposed to the impact factor in the SOBIAD Index were evaluated between 1.117 and 0.000. To ensure the reliability of the research and to reach all of the data, the "full count" sampling method was used in data collection. It is aimed to reach all units of the main mass, which is the research population, and to examine the entire population with the full counting method. With this method, it is possible to reach all the elements of the population.

Within the scope of the research, a total of 871 journals were reached. Due to space, time and financial constraints in the research, all of these journals could not be included in the graphics specified in the research, and selected journals were included. This situation can be shown as a limitation of the research. On the other hand, the fact that the research is a due diligence and compilation study in the national literature shows the original aspect of the research, and it is thought that the research will shed light on future studies.

When we evaluate the research on the scale of Türkiye, it is seen that multiple components are effective in the interaction of the impact factor data of 871 journals in the SOBIAD Index. In Web of Science and SOBIAD Index journal impact factor measurements, impact factor values were started with the number 1. The values above the number 1 (>1) were considered plus increasing values, and the values below the number 1 (<1) were considered as decreasing values, and the values zero and below zero (0) were considered as unoperated (n/a).

When the results obtained in the study are compared with the WOS-SSCI (6.19) data (Clarivate Journal Citation, 2011) it is seen that the average impact factor data of SOBIAD (0.19) is well below the average value of the journal impact factor of WOS-SSCI (SOBIAD Index, 2020b). With the research, the impact value of scientific journals in Türkiye, article citation impact values, the standards used by the journals, open access policies, editorial boards, international interactions, local, national and international contributions, reliability, indexes and the determining components of the total contribution values are also discussed. In the evaluation of the study content, measuring the quality of the journal may reveal a subjective value, rather, evaluating the journal impact factors and the values of the impact factors of the article citations, the author/s who cited the article, the publication(s) cited and the prestige of the journals in which they are published can be a more objective, better and more efficient measure (Habibzadeh & Yadollahie, 2008, p.171). According to the research findings, the articles are cited in cases where the impact factor of the journal is less than a value of <1 [Ex: Journal of History, Culture and Art Studies, impact factor (0.024), number of article citations: 10], in these cases, the journal content analysis can be compared to the one stated above. We can state the following reality through the SOBIAD Index data sample, that the mean value of the impact factor 0.19 which constitutes the scientific exchange rates of scientific journals in Türkiye, has been determined to be at an extremely low level. The impact factor calculations of SOBIAD

Index, as in the multiple components used in the impact factor calculation of the WOS data include journal citation indicators, cited document rates, original documents, citation time intervals, document content values, non-open access documents, percentage values of all open access documents, rates of publications on the gold and green path, national and international collaborations and interactions of publications, sphericity values of documents, journal impact factor (JIF) quarter, half and full time frame measures, JIF rank values, citation effects, global base areas of the documents, categorical domains and normalized citation effects, percentage value distributions of the documents across all data, citations within all elements of the documents /reference percentage values, fixed base percentage values of the documents, lifetimes of citations, article/document impact values, urgency use indexes of the documents, eigen-factor values, impact values of first and last author's works, proportions of hybrid documents, published countries and average citation values of countries, publishing house data and publishers' impact values, additional categories-commission reports, JIF percentage values and JIF ranking, and so on. The numerical indicator values of the components and their current presence status could not provide strong content support to the study data, and the research was conducted on limited data. This situation limited the research.

It has been determined that the "impact factor value measurement values of the journals indexed by TR Index could not be reached or were not made, so the journals were only included in the system with the TR Index acceptance criteria and commission decisions (TR Index, 2021c). Therefore, the impact factor of any journal published in TR Index and DergiPark Academic has not been revealed as an official result. In this context, it is a major shortcoming that journal impact factors are not measured in these institutions where content support is given to national journal publications such as TR Index and DergiPark.

We believe that using and applying similar criteria and data mining methods (Durmuşoğlu, 2017, p.1118-1120) on a world scale, as in WOS and Scopus Indexes, will be beneficial in measuring the impact factors of scientific journals and articles in Türkiye. With the research, it is seen that SOBIAD Index private company is the only institution where we can get official real results about journal impact factors in Türkiye. It has been determined that the impact factor value averages 0.19 of the SOBIAD Index and the journals included in the research are lower than those of OECD and European Union countries WOS 6.19 (Clarivate-Journal Citation, 2021, May 04). In this case, it is beneficial to evaluate Türkiye by the Council of Higher Education (YÖK), universities, TUBITAK, publishing houses, publisher editors and information producers/authors, and to produce and implement more rational and valid real policies. As stated in the science report of TÜBA, in order for Türkiye to be among the leading countries in producing science and technology (in scientific publishing), it is necessary to identify the failing parties and to intervene in these points with the right policies (Akçiğit & Tok, 2020, p.11). With the research, a compilation study was conducted by evaluating the current impact factors of scientific publishing journals in Türkiye through SOBIAD Index sample. It can be thought that the research study will contribute to similar scientific studies that will be carried out after it.

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Declaration of Conflicting Interests and Ethics

The author declares no conflict of interest. This research study complies with research publishing ethics. The scientific and legal responsibility for manuscripts published in IJATE belongs to the author.

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